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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,065	03/29/2001	Daniel Mark Dreps	AUS920000726US1	5346

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Duke W. Yee
Carstens, Yee & Cahoon, LLP
P.O. Box 802334
Dallas, TX 75380

EXAMINER	
MASON, DONNA K	

ART UNIT	PAPER NUMBER
2181	

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/821,065	Applicant(s) DREPS ET AL.
	Examiner Donna K. Mason	Art Unit 2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 June 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-9, 12, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 1 recites the limitation "bus design" in line 1. A "design" refers to a concept, and is therefore directed to non-statutory subject matter. The Examiner recommends changing "bus design" in claim 1, line 1 to --bus apparatus--. (It should be noted that for examination purposes, "bus design" has been interpreted as --bus apparatus--).

5. Claim 3 recites the limitation "the resistors" in line 1. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 12 recites the limitation "the resistors" in line 2. There is insufficient antecedent basis for this limitation in the claim.

7. Dependent claims 2-9 and 13 inherit the deficiencies of claims 1 and 12, respectively.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 1, line 1 recites a "bus design". However, a design is neither a process, machine, manufacture, nor composition of matter. Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1-4, 9-13, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art ("APA") in view of U.S. Patent No. 6,556,628 to Poulton, et al. ("Poulton").

With regard to independent claim 1 and as shown in Fig. 2 of the present application, the APA discloses a bus, including a clock driver (item 210), a clock receiver (item 220) coupled to the clock driver by two clock bus lines (items 270 and 272) carrying complementary clock pulses, a plurality of drivers (items 202, 204, and 206) a plurality of receivers (items 221, 214, and 216) each coupled to a respective one of the plurality of drivers by bus lines (items 262, 264, and 266). With regard to dependent claim 9, the APA teaches the bus, further including a plurality of outputs (items 282, 284, and 286) from the data receivers coupled to a deskew/retiming logic component (item 240).

With regard to independent claim 10 and dependent claims 11-13, and 18, and as shown in Fig. 1 of the present application, the APA discloses a data processing system (item 100), including a plurality of components (*e.g.*, items 102, 108, 104, etc.), and a bus (item 106) coupling at least two of the plurality of components. The APA also discloses the features of claims 10 and 18 as described with respect to claims 1 and 9 above.

The APA does not expressly disclose the bus or the data processing system where the receivers detect signals on respective bus lines with respect to a reference voltage derived from a combination of the complementary clock pulses, as described in independent claims 1 and 10. Poulton discloses receivers (Fig. 4, receivers Y and Y')

detecting signals on respective bus lines (Fig. 4, bus lines Y and Y') with respect to a reference voltage derived from a combination of complementary pulses (see column 2, lines 20-45).

The APA also fails to expressly disclose the bus or the data processing system, where the reference voltage is derived from a resistive connection between the complementary clock pulses, as described in dependent claims 2 and 11. Poulton teaches (Fig. 4) a reference voltage that is derived from a resistive connection between complementary pulses.

The APA also fails to expressly disclose the bus or the data processing system, where resistors in the resistive connection have approximately equivalent resistance, as described in dependent claims 3 and 12. Poulton teaches resistors in the resistive connection that have approximately equivalent resistance (column 6, lines 51-65).

The APA also fails to expressly disclose the bus, where the resistance is approximately equivalent to the resistance of the bus lines, as described in dependent claim 4, and the data processing system, where the resistance is approximately 50 ohms. Poulton teaches a resistance that is approximately equivalent to the resistance of the bus lines (column 6, lines 54-57) and a resistance that is approximately 50 ohms (column 6, lines 51-65).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the driver, receiver, and resistor configuration of Poulton with the APA. The suggestion or motivation for doing so would have been to alleviate the problems of increased power consumption caused by the use of a conventional single-

ended signaling system (column 1, lines 54-55), such as the local V_{ref} disclosed in the APA. Furthermore, the driver, receiver, and resistor configuration disclosed in Poulton alleviates the noise introduced in the signal transmitted over the bus lines, which may result in bit errors in the output from the receiver (column 1, lines 64-67). Even further, the driver, receiver, and resistor configuration of Poulton provides a larger signal swing for detection by the receiver than single-ended systems (column 2, lines 46-57). Finally, the sizing of the resistors in Poulton helps to reduce reflections in the system (column 6, lines 60-65).

Therefore, it would have been obvious to combine Poulton with the APA to obtain the invention as specified in claims 1-4, 9-13, and 18.

12. Claims 1-3, 9-12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the APA in view of U.S. Patent No. 6,278,312 to Dabral, et al. ("Dabral").

With regard to independent claim 1 and as shown in Fig. 2 of the present application, the APA discloses a bus, including a clock driver (item 210), a clock receiver (item 220) coupled to the clock driver by two clock bus lines (items 270 and 272) carrying complementary clock pulses, a plurality of drivers (items 202, 204, and 206) a plurality of receivers (items 221, 214, and 216) each coupled to a respective one of the plurality of drivers by bus lines (items 262, 264, and 266). With regard to dependent claim 9, the APA teaches the bus, further including a plurality of outputs

(items 282, 284, and 286) from the data receivers coupled to a deskew/retiming logic component (item 240).

With regard to independent claim 10 and dependent claims 11, 12, and 18, and as shown in Fig. 1 of the present application, the APA discloses a data processing system (item 100), including a plurality of components (*e.g.*, items 102, 108, 104, etc.), and a bus (item 106) coupling at least two of the plurality of components. The APA also discloses the features of claims 10 and 18 as described with respect to claims 1 and 9 above.

The APA does not expressly disclose the bus or the data processing system where the receivers detect signals on respective bus lines with respect to a reference voltage derived from a combination of the complementary clock pulses, as described in independent claim 1. As shown in Fig. 4B, Dabral discloses a reference voltage (item 433) derived from a combination of complementary clock pulses (SIGNAL and SIGNAL#).

With regard to dependent claims 2 and 11, the APA does not expressly disclose the bus or the data processing system where the reference voltage is derived from a resistive connection between the complementary clock pulses. As shown in Fig. 4B, Dabral discloses a reference voltage (item 433) derived from a resistive connection (items 432 and 434) between the complementary clock pulses (SIGNAL and SIGNAL#).

With regard to dependent claims 3 and 12, the APA does not expressly disclose the bus or the data processing system where resistors in the resistive connection have an approximately equivalent resistance. As described in column 6, lines 9-12, Dabral

discloses resistors in the resistive connection that have an approximately equivalent resistance.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the reference voltage and resistor configuration of Dabral with the APA. The suggestion or motivation for doing so would have been to reduce or eliminate driver noise from the data signals (column 1, lines 44-59).

Therefore, it would have been obvious to combine Dabral with the APA to obtain the invention as specified in claims 1-3, 9-12, and 18.

13. Claims 5-8 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the APA in view of Dabral as applied to claims 1, 2, 10, and 11 above, and further in view of U.S. Patent No. 6,456,123 to Oakeson, et al. ("Oakeson").

As described above, the APA in view of Dabral discloses the features of claims 1, 2, 10, and 11. With regard to claims 5-8 and 14-17, the APA in view of Dabral does not expressly disclose a first filter capacitor connecting the reference voltage signal to ground, and a second filter capacitor connecting the reference voltage to a supply voltage source. Also, the APA in view of Dabral also does not expressly disclose the bus or the data processing system, where the first and second filter capacitors have an approximately equivalent capacitance, and where the capacitance is within a renge of approximately 100 pico-farads and approximately 200 pico-farads.

As shown in Fig. 3, Oakeson discloses a first filter capacitor (item C2) connecting the reference voltage signal to ground, and a second filter capacitor (item C1)

connecting the reference voltage to a supply voltage source (item 11). In addition, Oakeson discloses the first and second filter capacitors having an approximately equivalent capacitance, (column 5, lines 29-36), and within the range of approximately 100 pico-farads and approximately 200 pico-farads (column 5, lines 38-45).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the capacitor configuration of Oakeson with the APA in view of Dabral. The suggestion or motivation for doing so would have been to reduce the susceptibility to inaccuracies caused by parasitics (column 1, lines 8-24).

Therefore, it would have been obvious to combine Oakeson with the APA in view of Dabral to obtain the invention as specified in claims 5-8 and 14-17.

Conclusion

14. A shortened statutory period for reply is set to expire THREE MONTHS from the mailing date of this communication. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this communication.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna K. Mason whose telephone number is (703) 305-1887. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on (703) 305-4815. The fax phone

number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

DKM

XUAN M. THAI
PRIMARY EXAMINER
TC 2100